BRIEF

Incorporating Ethics Content Throughout an Integrated Pharmacy Curriculum

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Objective. To incorporate ethics content into nine courses across three years of the didactic pharmacy curriculum and in introductory and advanced pharmacy practice experiences to ensure Doctor of Pharmacy (PharmD) students are prepared to address ethical issues.

Methods. A free-standing, one-credit ethics course from the existing curriculum was eliminated. Partnering with course directors from nine required PharmD courses across all three years of the didactic curriculum and with the Office of Experiential Education, an Integrated Ethics syllabus was created that provided each class of approximately 170 students with at least one credit of didactic ethics instruction and added ethics activities to the experiential curriculum. Learning approaches included lecture, case analysis, and discussion with preceptors. Assessment approaches included written case analyses, tests with multiple-choice and true/false questions, case vignette-based short-answer essay questions, and student discussions with preceptors.

Results. The newly integrated curriculum provided students with opportunities to discuss and apply ethics concepts several times throughout their coursework. The integration also ensured that ethics topics were relevant to the material students were learning in the host course at the time. The majority of students consistently rated the ethics sessions as useful, but some found the repeated application of the ethics problem-solving framework to be tedious and duplicative.

Conclusion. It is possible to embed ethics topics within different courses in the PharmD curriculum rather than offering a stand-alone ethics course at a single point in the curriculum. Challenges remain to assessing students’ ability to apply ethics principles once they are presented.

Keywords: ethics, education, curriculum

INTRODUCTION

Ethics is the study of right and wrong behavior.¹ An ethical dilemma arises when a difficult choice needs to be made between competing moral imperatives.² Pharmacists are regularly confronted with ethical dilemmas. Dilemmas in patient care can arise from conflicts between a pharmacist’s personal and/or professional values and a patient’s values, patient requests for prescription medications for which no refills were prescribed, privacy concerns over patient information,³ and where a patient’s treatment preferences differ from those of the pharmacist.³⁻⁵ Practice site dilemmas can arise because of conflicts with pharmacy coworkers and/or interprofessional colleagues, or pharmacist concerns over third-party payor rules.⁵ The pharmacist’s personal and/or professional values may conflict with business interests, resulting in yet another kind of dilemma.⁶ Dilemmas can also arise in emerging pharmacy practice settings, such as hospital emergency departments, drug courts, and mental health clinics.⁷

As a curricular topic for students pursuing the Doctor of Pharmacy (PharmD) degree, ethics is addressed directly in current Accreditation Council for Pharmacy Education (ACPE) Standard 11.1: Interprofessional team dynamics, and Standard 12.5: IPPE expectations.⁸ The section Social/Administrative/Behavioral Sciences within Appendix 1 of ACPE Standards 2016 details the expectation that students will explore “approaches for resolving ethical dilemmas in patient care, with an emphasis on moral responsibility and the ability to critically evaluate viable options against the needs of patients and other key stakeholders.”⁸

Since 2003 the University of Minnesota College of Pharmacy has operated on two campuses, Minneapolis (100-110 students per class) and Duluth (50-60 students per class). While all required didactic courses in the PharmD curriculum are taught to students on both campuses simultaneously using videoconferencing technology, faculty
members are also present in the classroom on each campus. Starting in 2013, the college implemented a restructured PharmD curriculum that more rationally sequenced and integrated topics throughout the didactic curriculum.

In the previous curriculum, ethics was a required one-credit stand-alone course taught over the first half of the spring semester of the third year (Table 1). A pharmacy ethics textbook was followed, chapter-by-chapter, to introduce students to ethics concepts and provide illustrative pharmacy practice-based cases. The course was taught for many years by the same pharmacy faculty member. Upon that faculty member’s retirement, the course was taught by the University’s Bioethics Center, with faculty members from nursing, public health, and medicine. These faculty members discussed contemporary ethical controversies appearing in the news or health care literature that did not always have a specific pharmacy focus. During this same time, the author offered a two-credit third-year ethics elective course based on an ethics problem-solving approach similar to that used in the required course (Appendix 1), but using student-provided cases from their pharmacy practice or other patient-care experiences. Unfortunately, because of curriculum scheduling issues, the elective ethics course had to be offered in the fall before students had taken the required ethics course the following spring. As a result, students were taking what proved to be an “advanced” ethics course before taking the “introductory” course.

Research in medicine and dentistry programs suggests that longitudinal exposure to ethics training has a greater impact on students’ ethical reasoning and confidence to deal with ethical dilemmas than does completing an isolated course inserted into the curriculum. Revision of the Doctor of Pharmacy curriculum in 2013 presented an opportunity to integrate ethics into courses across all three years of the didactic curriculum, with content featuring topics relevant to the material in those courses. Ethics activities were also incorporated into IPPEs and APPEs (Table 3).

The intent behind these changes in ethics instruction within the integrated curriculum was to provide students with opportunities to discuss and apply ethics concepts several times throughout the curriculum instead of only during half a semester, and “meet students where they were at” by highlighting ethics considerations relevant to material they were learning in the host courses at the time. This paper describes how those changes were made and summarizes student evaluations of the integrated ethics modules.

**METHODS**

The free-standing required ethics course within the previous curriculum was eliminated and Bioethics Center faculty members were released from teaching in the PharmD program. The author partnered with course directors from nine different required courses across all three years of the integrated didactic PharmD curriculum and with the Office of Experiential Education (Table 3) to create an Integrated Ethics syllabus. This integrated syllabus provided students with at least one credit of Ethics instruction in the classroom, and added Ethics activities to the experiential curriculum where none had existed previously. The author prepared materials for use in all nine didactic courses, subsequently leading the ethics sessions in seven of these courses. The integrated ethics syllabus was reviewed and approved by the college’s curriculum committee.

The author created and posted an Ethics Toolkit on the college’s electronic learning management system, providing entry-level ethics resources intended for students who had no previous formal ethics instruction. The toolkit included brief introductions to ethics terminology and definitions, virtue ethics (Aristotle), duty ethics (Emanuel Kant), libertarianism and utilitarianism (John Stuart Mill), and levels of moral development (Lawrence

### Table 1. Comparison of Ethics Instruction in the Previous and Integrated Pharmacy Curricula at the University of Minnesota

<table>
<thead>
<tr>
<th>Curriculum Prior to 2013</th>
<th>Integrated Curriculum (2013–Present)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contact time (h)</strong></td>
<td>15</td>
</tr>
<tr>
<td>Semester/Year</td>
<td>½ of Spring semester, Third professional Year</td>
</tr>
<tr>
<td>Teaching approaches</td>
<td>Lecture, occasional small group/large group case discussions</td>
</tr>
<tr>
<td>Teaching materials</td>
<td>Textbook (includes pharmacy practice-based cases); discussion of contemporary ethical controversies in the news or from healthcare literature</td>
</tr>
<tr>
<td>Assessment approaches</td>
<td>Single case write-up</td>
</tr>
</tbody>
</table>
Kohlberg, Carol Gilligan). The Code of Ethics for Pharmacists and the Oath of a Pharmacist were also provided. In addition, the author provided a problem-solving scheme for working through an ethical dilemma (Appendix 1) on the site and an example of an ethics case analysis written by the author. This site was made available to all students throughout their tenure in the PharmD program.

The Ethics Toolkit was also made available to all faculty members and preceptors as a resource to help them increase their confidence in applying ethics principles in their own discussions of ethical dilemmas. The author also actively engaged in “ethics outreach” within the college, leading case-based discussions for colleagues at department meetings and “lunch & learn” sessions, and during the university’s Research Ethics Week. Upon invitation, the author also joined in ethics class discussions led by other faculty members. After participating in the discussion, the author provided the faculty leader with feedback and suggestions for enhancing the session.

Several learning approaches were used within the ethics curriculum. With the exception of a lecture in the first-year Principles of Pharmacology course that addressed the ethical considerations surrounding pharmacogenomics testing, the 50-minute ethics modules were all discussions of ethics cases created by the author (Table 2). Within large-lecture classrooms, students gathered into

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Title &amp; Scenario Themes</th>
<th>Ethics Topics Addressed</th>
<th>Learning Approach &amp; Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Becoming a Pharmacist: Scope of practice; Inappropriate self-care; Prescription filling error; Social Media etiquette; Prescription drug misuse; Caring for one another; Refilling a prescription without authorized refills</td>
<td>Professionalism, Ethics Problem-Solving, Beneficence, Virtue Ethics, Duty Ethics, Social Contract Theory, Pharmacist’s Code of Ethics, Oath of a Pharmacist</td>
<td>Small group and large group discussions of case scenarios. Assessment: case write-up using Ethics problem solving approach</td>
</tr>
<tr>
<td>1</td>
<td>Foundations of Social &amp; Admin Pharm: Purchasing off-contract; Pharmacy owner overruling staff pharmacist’s product recommendation to patient</td>
<td>Ethics Problem-Solving, Fiduciary responsibility, Integrity, Virtue Ethics, Duty Ethics, Utilitarianism, Pharmacist’s Code of Ethics, Oath of a Pharmacist</td>
<td>Small group and large group discussions of case scenarios. Assessment: case write-up using Ethics problem solving approach</td>
</tr>
<tr>
<td>3</td>
<td>Infectious Diseases: Antibiotic Stewardship; Pharmaceutical Pricing</td>
<td>Beneficence, Fidelity, Justice, Duty Ethics, Social Contract Theory, Utilitarianism</td>
<td>Small group and large group discussions of case scenarios. Assessment: Exam questions.</td>
</tr>
<tr>
<td>3</td>
<td>Evidence-Based Practice: IRBs</td>
<td>Research Ethics, Informed Consent</td>
<td>Online recorded presentations. Assessment: Research paper.</td>
</tr>
<tr>
<td>3</td>
<td>Integrated Oncology: Elderly cancer patient with severe sepsis; advance directive is equivocal relative to patient’s current clinical situation</td>
<td>Advance Directives, Autonomy (Substituted judgement), Fidelity, Justice</td>
<td>Small and group case discussion from assigned perspective (patient, family member, physician, insurance provider). Assessment: Exam questions.</td>
</tr>
</tbody>
</table>
self-selected “learning neighborhoods” of two to eight students. The author projected the Ethics Problem-Solving framework (Appendix 1) on both campuses to help guide student discussion of an ethics case relevant to topics in the hosting course to which the students had already been introduced. After 15-20 minutes of small-group discussion, the author reconvened the 160-170 students on both campuses to moderate a class-wide discussion, with selected groups from each campus reporting. The author asked the reporters for the small groups to support their analyses and recommendations using resources from the Ethics Toolkit. In the third-year Biotechnology course, student groups were assigned one of four perspectives in the case (patient, provider, family member, or third-party payor). Selected groups representing each perspective were called upon to summarize their group’s discussion and action plan from their assigned perspective. The author then moderated a class-wide discussion of the groups’ action plans.

Student’s knowledge of and ability to apply ethics principles were assessed using several different methods (Table 2). In the introductory course, Becoming a Pharmacist, students individually worked up a pharmacy practice-based ethics case using the Ethics Problem Solving framework and other resources from the online Ethics Toolkit and submitted a two-page double-spaced write up. These were graded by teaching assistants using a rubric created by the author. The teaching assistants contacted the author in those infrequent instances where the teaching assistant was unable to grade a student response based on the rubric.

In other courses, the author contributed two or three ethics-related multiple-choice, true/false or case vignette-based short-answer essay questions to a midterm and/or final examination in the course. Short-answer essay questions were again graded by teaching assistants using an author-provided rubric. During introductory and advanced pharmacy practice experiences, the student and preceptor discussed a practice-based ethical dilemma that one of them had encountered. Preceptors evaluated the students’ “ethical behavior” as a component of the professionalism domain in the Entrustable Professional Activity (EPA) rubric used by the school. The University of Minnesota’s Institutional Review Board determined that this project did not constitute human subjects research.

RESULTS

In each course in which the ethics modules appeared, students consistently rated the ethics session very highly. Across seven first- to third-year didactic courses from 2015 through 2019, as many as 5880 students participated in the ethics sessions. Not all students attended all class sessions (all sessions of required didactic courses were video recorded for students unable to attend the live session), nor did all students who attended the live sessions submit course evaluations. However, among the 3895 students (66.2%) who did submit evaluations, the usefulness of the ethics modules was assigned an average rating of 5.3 +0.2 on a six-point forced-choice scale (6-Very Useful). Most students appreciated the chance to discuss the ethical considerations about different topics with classmates, noting that the ethics discussions provided a nice break from listening to lectures. Not all students were appreciative of the approaches used in the modules. As one student stated, “I don’t particularly agree with the way the instructor makes us work through a case.” Criticisms like this one appeared more frequently in third-year courses, by which time students had had several opportunities to apply the Ethics Problem Solving framework. This criticism led to the introduction of the “assigned perspective” exercise in the third-year Biotechnology course mentioned previously.

DISCUSSION

Although ethics instruction appears to have been successfully implemented throughout the integrated PharmD curriculum at our college, challenges remain. Having taught ethics since 1993, the author opines that the most comprehensive way to assess a student’s ability to work through an ethical dilemma is to have the student provide an oral or written analysis of a case, justifying their ethics analysis and proposed resolution by applying ethical principles, philosophers, and professional codes of ethics. Based on the author’s experience, however, such an assessment approach becomes difficult to manage with more than 25 students in a class.

Large class assessment alternatives, such as examinations with multiple-choice or true/false questions, may not accurately reflect a student’s true understanding of or ability to apply ethical principles to an ethics case vignette. (Students may select the correct response simply by guessing.) Furthermore, such test items run the risk of the instructor identifying only one answer as being “right,” rendering all other answers “wrong.” In reality, however, ethical decisions are much more situational and nuanced, and not simply right or wrong. Examinations using multiple-choice ethics questions have occasionally resulted in thoughtful (and lengthy) written appeals from students to the author, arguing why their selection was the right answer. Short-answer essay questions can provide somewhat greater insight into a student’s understanding of ethical principles and concepts; however, the time a student has to reflect on the dilemma presented and write a
<table>
<thead>
<tr>
<th>First Year</th>
<th>Second Year</th>
<th>Third Year</th>
<th>Fourth Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FALL SEMESTER</strong></td>
<td></td>
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<tr>
<td><strong>Becoming a Pharmacist</strong>&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Career &amp; Professional Foundations 2</td>
<td>Career &amp; Professional Foundations 4</td>
<td>APPE</td>
</tr>
<tr>
<td>Integrated Biochemical Sciences</td>
<td>Medicinal Chemistry/Pharmacology of Cardiovascular Agents</td>
<td>Medicinal Chemistry and Neuropharmacology</td>
<td>APPE</td>
</tr>
<tr>
<td>Foundations of Social &amp; Administrative Pharmacy</td>
<td>Cellular Metabolism and Nutrition</td>
<td>Biotechnology Drugs</td>
<td>APPE</td>
</tr>
<tr>
<td>Foundations of Pharmaceutical Care</td>
<td>Cardiovascular Pharmacotherapy</td>
<td>Infectious Diseases</td>
<td>APPE</td>
</tr>
<tr>
<td>Drug Delivery 1</td>
<td>Pharmacokinetics</td>
<td>Pharmaceutical Care Skills Lab 5</td>
<td>APPE</td>
</tr>
<tr>
<td>Pharmaceutical Care Skills Lab 1</td>
<td>Pharmaceutical Care Skills Lab 3</td>
<td>Gastrointestinal, Dermatology, Geriatrics, Arthritis and Gout</td>
<td>APPE</td>
</tr>
<tr>
<td>Pharmaceutical Calculations</td>
<td>Community Teacher Experience 1</td>
<td>Pharmacotherapy of Neurology and Psychiatric Drugs</td>
<td>APPE</td>
</tr>
<tr>
<td>Introduction to Community Health</td>
<td>Community IPPE</td>
<td>Evidence-based Practice Institutional IPPE</td>
<td>APPE</td>
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<tr>
<td><strong>SPRING SEMESTER</strong></td>
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<tr>
<td>Career &amp; Professional Foundations 1</td>
<td>Career &amp; Professional Foundations 3</td>
<td>Biopharmaceutics</td>
<td>APPE</td>
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<tr>
<td>Applied Pharmaceutical Care</td>
<td>Pharmaceutical Care Skills Lab 4</td>
<td>Pharmacy Law (online)</td>
<td>APPE</td>
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<tr>
<td>Drug Delivery 2</td>
<td>Integrated Endocrinology</td>
<td>Pharmacy Outcomes</td>
<td>APPE</td>
</tr>
<tr>
<td>Pharmaceutical Care Skills Lab 2</td>
<td>Diabetes and Metabolic Syndrome</td>
<td>Integrated Oncology</td>
<td>APPE</td>
</tr>
<tr>
<td>Principals of Medicinal Chemistry</td>
<td>Kidney, Fluid and Electrolytes</td>
<td>Acute Care</td>
<td>Being a Pharmacist</td>
</tr>
<tr>
<td>Immune System &amp; Infectious Disease</td>
<td>Pulmonary Pharmacotherapy</td>
<td>Geriatrics (elective)</td>
<td></td>
</tr>
<tr>
<td><strong>Principles of Pharmacology</strong></td>
<td>Community Teacher Experience 2</td>
<td>Ethics in Pharmacy Practice (elective)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Community IPPE</td>
<td>Institutional IPPE</td>
<td></td>
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</tbody>
</table>

<sup>a</sup> Ethics topics are integrated into courses shown in bold text

Abbreviations: APPE = Advanced Pharmacy Practice Experience, IPPE = Introductory Pharmacy Practice Experience
thorough response is severely limited within the context of a larger timed examination.

Tracking growth in a student’s ability to work up an ethical dilemma throughout the curriculum also remains a challenge. Ideally, a single faculty member would evaluate a student’s portfolio of written case analyses and examination scores each semester and be able to provide individualized feedback to the student. However, colleagues have informally shared with the author that they feel they lack the expertise to coach a student in how to comprehensively apply ethics principles to analyze an ethical dilemma. Responsibility for coaching students then falls to faculty members who are confident in their ability to mentor students in this area, adding to these faculty members’ workloads in an uneven fashion.

To gain proficiency in coaching students through ethical issues, faculty members may avail themselves of the references cited earlier in this paper13-17 and take advantage of educational opportunities offered through professional organizations, including the American Association of Colleges of Pharmacy (AACP)18 and others.19 Examples of ethical dilemmas to discuss with students can come from the personal experiences of faculty members and students as health care provider or patient, as well as from textbooks,4,5 current news stories,4,5 or an internet search for the term “pharmacy ethics cases.”

Another challenge teaching in an integrated curriculum is keeping track of “where to be and when” to lead a session, and to a lesser extent to keeping track of which student cohort will be in a particular session. Each course is on a different schedule and has its own LMS site where Ethics material needs to be posted. Faculty teaching in an integrated curriculum need to always be looking ahead in the calendar to determine when their teaching appearance is scheduled across all three years and to ensure that different LMS sites are updated with the current version of relevant readings and/or cases. Faculty also need to allow enough lead time to review what material students have covered in each host course prior to the session they are leading to protect against “reaching ahead,” ie, expecting students to have knowledge of material that they have not yet covered.

Despite the challenges, embedding ethics topics into an integrated curriculum also lends itself to incorporating ethics into an interprofessional course. Cases used in interprofessional settings are best created and vetted by faculty members from each of the professions participating. Interprofessional preparation of case material ensures that adequate details are included to allow students to apply their profession-specific knowledge and skills to address the interface between clinical and ethical considerations, resulting in a more authentic learning experience for all students.20

A number of limitations are associated with this initiative. Although ethics topics have been integrated in our current curriculum since 2013, this work involved only one school; such integration may not be feasible in other pharmacy programs. Earlier research among medicine and dentistry students suggests that multiple exposures to ethics positively impacts students’ ethical reasoning and confidence to deal with ethical dilemmas;10-12 however, this type of outcomes data was not collected in the current initiative. Furthermore, comparative outcomes data were unavailable from either historical or concurrent controls.

CONCLUSION

The experience at the University of Minnesota College of Pharmacy demonstrates that it is possible to embed ethics topics within different courses as part of an integrated PharmD curriculum rather than offer a standalone ethics course at a single time point in the curriculum. Students seem to appreciate this integrated approach, particularly when provided the opportunity to discuss ethics cases instead of passively listening to a lecture about ethics. Challenges to teaching ethics in an integrated curriculum remain, mostly regarding the faculty resources needed to adequately assess students’ proficiency and growth in their ability to work through a pharmacy-based ethical dilemma.

REFERENCES

Appendix 1. An Approach to Resolving Ethical Dilemmas

A dilemma is a problem where there is a conflict of values where there is no clear right or wrong answer. There may also be a conflict with a statute or rule when these seem arbitrary or unjust. A choice must be made between two or more moral or ethical goods. If there is a clear course of action, then there is no dilemma.

1. Determine if an ethical dilemma exists. (Only one of the below needed for dilemma to exist.)
   - Is the situation unfair? To whom?
   - Does the situation break a promise?
   - Will the situation result in harm? To whom?
   - Will the situation threaten existing or future relationships? With whom?
   - Does the situation compromise someone’s rights?
   - Will a possible action benefit the patient?
   - Is the situation disrespectful? To whom?

2. Determine the facts related to the dilemma by identifying:
   - Technical facts
   - Clarify the facts if necessary
   - Do not confuse facts with differences in opinion
   - Legal constraints

3. Identify the principles and values that play a role in the situation and decide which are in conflict:
   - Personal values
   - Professional values
   - Institutional values
   - Societal values

4. IDENTIFY YOUR GOAL in resolving the dilemma. (What do you hope to accomplish?)
5. Generate potential reasonable solutions to the dilemma. (What could be done?)
6. Using ethical concepts and principles, analyze the pros and cons of each alternative.
7. Select one of the alternatives. (What should be done?)
8. Anticipate potential objections to the selected course of action.
9. Evaluate the results.
10. Address how could this ethical dilemma have been avoided in the first place.

* Readers are free to use the information in this appendix in their classrooms.